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HAYNES AND BOONE, LLP
IP Section
2323 Victory Avenue
Suite 700
Dallas, TX 75219

EXAMINER	
KO, STEPHEN K	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,087	CHANG ET AL.	
	Examiner	Art Unit	
	STEPHEN KO	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/10/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/49504.

With regard to claim 15, applicants' *means for positioning a wafer*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a wafer stage (Fig.4, #402). The use of wafer stage is discussed in paragraph 25 of the specification. Applicants' *means for providing the first fluid containing no surfactant*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary supply reservoir (Fig.4, #412), as discussed in paragraph 25 of the specification. Applicants' *means for providing a surfactant to the first fluid to form a second fluid to reduce an adherence of floating defects to the wafer or the objective lens*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a secondary supply reservoir (Fig. 4, not shown), as discussed in paragraph 26 of the specification. With regard to claim 16, applicants' *means for collecting the first fluid*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary recovery reservoir (Fig.4, #414). The use of primary recovery reservoir is discussed in paragraphs 25 of the specification. With regard to claim 19, applicants' *means for collecting the second fluid*, in accordance with 35 U.S.C.

112 sixth paragraph is presumed to refer to a secondary recovery reservoir (Fig.4, not shown). The use of secondary recovery reservoir is discussed in paragraph 26 of the specification.

The recitation "means for performing a light exposing operation on the wafer using an objective lens immersed in the first fluid" (claim 15, L. 4-5) is not interpreted under 35 USC 112, sixth paragraph, because it is modified by sufficient structure, material, or acts for achieving the specified function. MPEP 2181.

For claims 15, WO 99/49504 teaches an immersion lithography system comprising a wafer stage (Fig.1, #9); a first liquid supply (read as primary supply reservoir, Fig.2, #5); a first liquid recovery (read as primary recovery reservoir, Fig.2, #6); a projection optical system (read as means for performing a light exposing operation on the wafer using an objective lens immersed in the first fluid, Fig.1, #PL); a second liquid supply (read as secondary liquid supply reservoir, Fig.3, #5); and a second liquid recovery (read as secondary liquid supply reservoir, Fig.3, #6).

For claim 16, note that WO 99/49504 teaches the first liquid recovery (read as primary recovery reservoir, Fig.2, #6).

For claims 17 and 18, since all the structures are found in the prior art, it is fully capable of performing the functions as recited in claims 17-18.

For claim 19, note that WO 99/49504 teaches the second liquid recovery (read as secondary recovery reservoir, Fig.3, #6).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in view of Zhang et al (US 2005/0161644) in further view of Amblard et al (US 7,056,646).

For claims 6 and 8, Hazelton et al teach a method for cleaning an optical element (abstract, L. 12-13) related to an immersion lithography system comprising the steps of exposing a wafer under normal exposure condition (i.e. exposing wafer with light through the optical element in the presence of a first fluid, L. 5 of paragraph [0034]); and having the optical element brought into contact with cleaning liquid (read as second fluid, L.4 of paragraph [0035]) after exposure process. Note that apparently Hazelton et al does not explicitly teach the positioning step, however such step must be made in order to expose the wafer, which means that the step is implicitly in. (Also see abstract, P.6, L.28-29; P.7, L.5; and Fig.10 of the WO 2004/093130 (PCT application PCT/US2004/010309); Summary of the Invention and Fig.1 of 60/482,913; and Summary of the Invention of 60/462556)

Hazelton et al remain silent about providing a first fluid containing surfactant.

However, Zhang et al teach a step of providing an immersion fluid comprising a surfactant to minimize formation of micro-bubble (paragraph [0012]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Hazelton et al by providing a first fluid containing surfactant as mentioned in Zhang et al for to minimizing formation of micro-bubble (Zhang et al, paragraph [0012]).

Both Hazelton et al and Zhang et al do not teach a step of providing a second fluid having a higher surfactant concentration than the first fluid. Note that Hazelton et al discloses that any cleaning liquid may be used provided it has a sufficiently strong affinity to the liquid to be removed (Hazelton et al, L.8-9 of paragraph [0035]).

Amblard et al teach a step of providing a base developer to clean glass (col.3, L.5) comprising ethanol (col.3, L.12), ammonium hydroxide (col.3, L.18-19) and surfactants (col.4, L.27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of combined teaching of Hazelton et al and Zhang et al by providing a second fluid having surfactant as mentioned in Amblard et al since Hazelton et al disclose that any cleaning liquid may be used provided it has a sufficiently strong affinity to the liquid to be removed, and both ethanol; ammonium hydroxide and surfactant have strong affinity to water and also to enhance manufacture efficiency by cleaning the optical element while developing the substrate. Regarding a second fluid having a higher surfactant concentration than the first fluid, it is noted that concentration of the surfactant in the second fluid is result effective, because it affect the efficiency for cleaning the optical element (for example, concentration of soap (a kind of surfactant) presented in a cleaning solution will affect the efficiency for cleaning), and one skilled in the art would modify different variables to achieve optimum result, consult, *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

For claim 2, note that the presence of photoresist is reasonably expected within the teaching of combined teaching of Hazelton et al, Zhang et al and Amblard et al since the wafer undergoes a light exposing operation, which projects image on the wafer.

For claim 3, note that the first fluid is an immersion lens when performing a light exposing operation.

For claim 4, note that the surfactant inherently reduce surface tension of the optical element with the first fluid.

For claim 5, note that the step of surfactant changing a surface property of the wafer to make it more hydrophilic is within the teaching of combined teaching of Hazelton et al; Zhang et al and Amblard et al since the surfactant reduce surface tension of a surface of the wafer and first fluid.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in view of Zhang et al (US 2005/0161644) and Amblard et al (US 7,056,646) in further view of Krautschik (US 2004/0125351).

Hazelton et al, Zhang et al and Amblard et al teach a method for cleaning lens used in an immersion lithography system cited above.

Hazelton et al, Zhang et al and Amblard et al do not teach a step of providing the first fluid before starting the light exposing operation.

However, Krautschik teaches a step of immersing a gap between a lens element and a substrate with an immersion liquid, before starting projecting image of reticle onto the substrate (read as providing the first fluid before starting the light exposing operation, Fig.5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of combined teaching of Hazelton et al, Zhang et al and Amblard et al by having a step of providing the first fluid before starting the light exposing operation as mentioned in Krautschik such that projected light can

passes through the immersion liquid to perform immersion lithography, which enhance resolution.

8. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in view of Lyons et al (US 7,125,652) in further view of Amblard et al (US 7,056,646).

Hazelton et al teach a method for cleaning an optical element (abstract, L. 12-13) related to an immersion lithography system comprising the steps of exposing a wafer under normal exposure condition (i.e. exposing wafer with light through the optical element in the presence of a first fluid, L. 5 of paragraph [0034]); and having the optical element bought into contact with cleaning liquid (read as second fluid, L.4 of paragraph [0035]) after exposure process. Note that apparently Hazelton et al does not explicitly teach the positioning step, however such step must be made in order to expose the wafer, which means that the step is implicitly in. (Also see abstract, P.6, L.28-29; P.7, L.5; and Fig.10 of the WO 2004/093130 (PCT application PCT/US2004/010309); Summary of the Invention and Fig.1 of 60/482,913; and Summary of the Invention of 60/462556)

Hazelton et al remain silent about the composition of the first fluid.

However, Lyons et al disclose it is well known to use de-ionized water as an immersion lithography medium when performing a light exposing operation (col.1, L.47-48).

It would have been obvious to one of ordinary skill in the art at the time the invention as made to modify the method of Hazelton et al by using de-ionized water as

an immersion lithography mediums as mentioned in Lyons et al since de-ionized water is cost efficiency and easy handling.

Both Hazelton et al and Lyons et al do not teach the second fluid comprising a surfactant-spiked water immersion fluid.

However, Amblard et al teach a step of providing a base developer to clean glass (col.3, L.5) comprising ethanol (col.3, L.12), ammonium hydroxide (col.3, L.18-19) and an ionic or non-ionic surfactants (col.4, L.27-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of combined teaching of Hazelton et al and Lyons et al by providing a second fluid having surfactant as mentioned in Amblard et al since Hazelton et al disclose that any cleaning liquid may be used provided it has a sufficiently strong affinity to the liquid to be removed, and both ethanol; ammonium hydroxide and surfactant have strong affinity to water and also to enhance manufacture efficiency by cleaning the optical element while developing the substrate.

For claim 10, note that the presence of photoresist is reasonably expected within the teaching of combined teaching of Hazelton et al, Lyons et al and Amblard et al since the wafer undergoes a light exposing operation, which projects image on the wafer.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in view of Lyons et al (US 7,125,652) and Amblard et al (US 7,056,646) in further view of Zhang et al (US 2005/0161644).

For claim 14, Hazelton et al, Lyons et al and Amblard et al teach a method for cleaning an optical element. Note that the first and second fluids is inherently minimize

micro-bubble since Zhang et al disclose presence of at least one additive such as surfactant or providing at least one carrier medium such as de-ionized water (Zhang et al, paragraph [0013]) without the addition of at least one additive will provide a benefit of minimizing the formation of micro-bubbles (Zhang et al, paragraph [0012]).

10. Claims 15-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Deng et al (US 2005/0164502) in view of Hazelton et al (US 2006/00523185).

With regard to claim 15, applicants' *means for positioning a wafer*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a wafer stage (Fig.4, #402). The use of wafer stage is discussed in paragraphs 25 of the specification. Applicants' *means for providing the first fluid containing no surfactant*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary supply reservoir (Fig.4, #412), as discussed in paragraph 25 of the specification. Applicants' *means for providing a surfactant to the first fluid to form a second fluid to reduce an adherence of floating defects to the wafer or the objective lens*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a secondary supply reservoir (Fig. 4, not shown), as discussed in paragraph 26 of the specification. With regard to claim 16, applicants' *means for collecting the first fluid*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary recovery reservoir (Fig.4, #414). The use of primary recovery reservoir is discussed in paragraphs 25 of the specification. With regard to claim 19, applicants' *means for collecting the second fluid*, in accordance with 35 U.S.C. 112 sixth paragraph is presumed to refer to a secondary recovery reservoir (Fig.4, not

shown). The use of secondary recovery reservoir is discussed in paragraph 26 of the specification.

The recitation "means for performing a light exposing operation on the wafer using an objective lens immersed in the first fluid" (claim 15, L. 4-5) is not interpreted under 35 USC 112, sixth paragraph, because it is modified by sufficient structure, material, or acts for achieving the specified function. MPEP 2181.

For claims 15 and 19, Deng et al teach an immersion lithography system comprising a wafer stage (Fig.1, #240, paragraph [0011]); a liquid supply (read as a supply reservoir, Fig.2, #220, paragraph [0011]); a liquid recovery (read as a recovery reservoir, Fig.2, #230, paragraph [0011]); and an imaging lens system (read as means for performing a light exposing operation on the wafer using an objective lens immersed in the first fluid, Fig.2, #210, paragraph [0011]).

Deng et al remain silent about a means for providing a surfactant to the first fluid to form a second fluid to reduce an adherence of floating defects to the wafer or the objective lens; and means for collecting the second fluid.

Hazelton et al teach a cleaning liquid supplying means (Fig.10, unlabeled, the pipe on top of a valve #25; Fig.10 of WO 2004/093130, #23; and drain of Fig.1 of 60/482,913), which is fully capable of providing a surfactant to the immersion liquid to reduce an adherence of floating defects to the wafer or the optical element; and a recovery nozzle (Fig. 10, #23; Fig.10 of WO 2004/093130, #23; and drain of Fig.1 of 60/482,913). (Also see abstract and Fig.10 of the WO 2004/093130 (PCT application PCT/US2004/010309); and Fig.1 of 60/482,913).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Deng et al by adding a cleaning liquid supplying means; and a recovery nozzle as motivated by Hazelton et al to enhance cleaning procedure, such that an optical element can be easily maintained and its useful lifetime can be improved (paragraph [0008] and paragraph [0014] of US 2006/00231985; P.2, L.10 and P.3, L.10-11 of WO 2004/093130 (PCT application PCT/US2004/010309; and P.3, L.6-7 and L9-10 of 60/482,913).

Deng et al and Hazelton et al remain silent about the cleaning liquid supplying means comprising a supply reservoir; and a recovery nozzle comprising a recovery reservoir.

However, WO 99/49504 teaches an immersion lithography system providing a liquid supply (read as supply reservoir, Fig.2, #5); and a liquid recovery (read as recovery reservoir, Fig.2, #6) for supplying and recovering liquid between a projection optical system (Fig.4, #PL, abstract) and a wafer (Fig.4, #W, abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of combined teaching of Deng et al and Hazelton et al by adding a supply reservoir (read as means for providing the first fluid containing no surfactant) to the means for supplying a cleaning liquid; and a recovery reservoir (read as means for collecting the second fluid as in claim 19) to the recovery nozzle as motivated by WO 99/49504 to ensure liquid is provided if needed and to collect used liquid for reuse or later disposal.

For claim 16, note that Deng et al teach a liquid recovery (read as a recovery reservoir, Fig.2, #230, paragraph [0011]).

For claims 17 and 18, since all the structures are found in the prior art, it is fully capable of performing the functions as recited in claims 17-18.

11. Claims 20-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in further view of Amblard et al (US 7,056,646).

Hazelton et al teach a method for cleaning an optical element (abstract, L. 12-13) related to an immersion lithography system comprising the steps of exposing a wafer under normal exposure condition (i.e. exposing wafer with light through the optical element in the presence of a first fluid, L. 5 of paragraph [0034]); and having the optical element bought into contact with cleaning liquid (read as second fluid, L.4 of paragraph [0035]) after exposure process (Also see abstract, P.6, L.28-29; P.7, L.5; and Fig.10 of the WO 2004/093130 (PCT application PCT/US2004/010309); Summary of the Invention and Fig.1 of 60/482,913; and Summary of the Invention of 60/462556). Note that apparently Hazelton et al does not explicitly teach the positioning step, however such step must be made in order to expose the wafer, which means that the step is implicitly in. Hazelton et al do not teach the second fluid comprising a surfactant and NH_4OH.

However, Amblard et al teach a step of providing a base developer to clean glass (col.3, L.5) comprising water (col.3, L.11), ethanol (col.3, L.12), ammonium hydroxide (col.3, L.18-19) and an ionic or non-ionic surfactants (col.4, L.27-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of combined teaching of Hazelton et al and Lyons et al by providing a second fluid having surfactant as mentioned in Amblard et al since Hazelton et al disclose that any cleaning liquid may be used provided it has a sufficiently strong affinity to the liquid to be removed, and both ethanol; ammonium hydroxide and surfactant have strong affinity to water and also to enhance manufacture efficiency by cleaning the optical element while developing the substrate.

For claim 21, note that the presence of photoresist is reasonably expected within the teaching of combined teaching of Hazelton et al and Amblard et al since the wafer undergoes a light exposing operation, which projects image on the wafer.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in further view of Amblard et al (US 7,056,646) in further view of Lyons et al (US 7,125,652).

Hazelton et al and Amblard et al teach a method for cleaning an optical element cited above.

Hazelton et al and Amblard et al do not teach the first fluid is a de-ionized water.

However, Lyons et al disclose it is well known to use de-ionized water as an immersion lithography medium when performing a light exposing operation (col.1, L.47-48).

It would have been obvious to one of ordinary skill in the art at the time the invention as made to modify the method of combined teaching of Hazelton et al and

Amblard et al by using de-ionized water as an immersion lithography mediums mentioned in Lyons et al since de-ionized water is cost efficiency and easy handling.

13. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazelton et al (US 2006/0023185) in further view of Amblard et al (US 7,056,646) in further view of Langford (US 5,443,801).

Hazelton et al and Amblard et al teach a method for cleaning an immersion lithography system cited above.

For claims 24-25 and 27, both Hazelton et al and Amblard et al do not teach a step of providing the second fluid comprising peroxide (H2O2).

However, Langford discloses a step of using a solution having hydrogen peroxide to disinfect an optical element (col.2, L.28-30).

Since it is well known that one particular problem of contaminants which can adversely affect the quality of the exposure pattern incident on the wafer is that growth of biological contaminants (e.g. bacteria, algae, etc) on parts that come in contact with an immersion fluid, one skill in the art would have been found obvious to add hydrogen peroxide into the second fluid of combined teaching of Hazelton et al and Amblard et al to control the presence of biological contaminants.

For claim 26, both Hazelton et al and Amblard et al do not teach a step of providing the second fluid comprising ozone (O3).

However, Langford teaches a step of using ozone bath to sterilize and clean an optical element (col.5, L.54-63).

Since it is well known that one particular problem of contaminants which can adversely affect the quality of the exposure pattern incident on the wafer is that growth of biological contaminants (e.g. bacteria, algae, etc) on parts that come in contact with an immersion fluid, one skill in the art would have been found obvious to add ozone (O3) into the second fluid of combined teaching of Hazelton et al and Amblard et al to control the presence of biological contaminants.

Response to Arguments

14. Applicant's arguments with respect to claims 2-27 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicants' argument that examiner fail to carry the burden of establishing that Hazelton et al is actually prior art with respect to the present application, Examiner position is that because all the materials used for the rejection are found in provisional application 60/462,556 and/or 60/482,913; and the PCT application PCT/US2004/010309 is (1) designated the United States, (2) published by the World Intellectual Property Organization, and (3) publication occurred in the English language, Hazelton et al is a prior art. In order to proof the subject matter relied upon to make rejection in compliance with 25 U.S.C. 112, first paragraph, examiner provides WO 2004/093130 (PCT application PCT/US2004/010309); and provisional applications 60/462,556 and 60/482,913 to show that the subject matter relied upon to make rejection in compliance with 25 U.S.C. 112, first paragraph. Examiner showed that the subject matter relied on for the rejection is fully disclosed in the provisional(s), PCT application and Hazelton US publication (For example in last two lines of P.2 of the

office action dated 07/08/2009). Regarding other dependent claims, the subject matters are either inherent, not rely on Hazelton et al or disclosed in WO 2004/093130 (PCT application PCT/US2004/010309); 60/482,913 and/or 60/462556 as mentioned in the last two lines of P.2, L.19-22 of P.7 and L.17-19 of P.9 of the office action dated 07/08/2009. In response to applicants' argument that examiner improperly interpreted the means-plus-function limitations/improperly ignores functional language, examiner position is that the Federal Circuit explained the two step analysis involved in construing means-plus-function limitations in Golight Inc. v. Wal-Mart Stores Inc., 355 F.3d 1327, 1333-34, 69 USPQ2d 1481, 1486 (Fed. Cir. 2004): The first step in construing a means-plus-function claim limitation is to define the particular function of the claim limitation. Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 [58 USPQ2d 1801, 1806] (Fed. Cir. 2001). "The court must construe the function of a means-plus-function limitation to include the limitations contained in the claim language, and only those limitations." Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 [63 USPQ2d 1725, 1730] (Fed. Cir. 2002). The next step in construing a means-plus-function claim limitation is to look to the specification and identify the corresponding structure for that function. "Under this second step, 'structure disclosed in the specification is "corresponding" structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.'" Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1210 [68 USPQ2d 1263, 1267] (Fed. Cir. 2003) (quoting B. Braun Med. Inc. v. Abbott Labs., 124 F.3d 1419, 1424 [43 USPQ2d 1896, 1900] (Fed. Cir. 1997)) and the application of a prior art reference to a

means or step plus function limitation requires that the prior art element perform the identical function specified in the claim (See MPEP 2182). In this case, with regard to claim 15, applicants' *means for positioning a wafer*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a wafer stage (Fig.4, #402). The use of wafer stage is discussed in paragraphs 25 of the specification. Applicants' *means for providing the first fluid containing no surfactant*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary supply reservoir (Fig.4, #412), as discussed in paragraph 25 of the specification. Applicants' *means for providing a surfactant to the first fluid to form a second fluid to reduce an adherence of floating defects to the wafer or the objective lens*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a secondary supply reservoir (Fig. 4, not shown), as discussed in paragraph 26 of the specification. With regard to claim 16, applicants' *means for collecting the first fluid*, in accordance with 35 U.S.C. 112 sixth paragraph, is presumed to refer to a primary recovery reservoir (Fig.4, #414). The use of primary recovery reservoir is discussed in paragraphs 25 of the specification. With regard to claim 19, applicants' *means for collecting the second fluid*, in accordance with 35 U.S.C. 112 sixth paragraph is presumed to refer to a secondary recovery reservoir (Fig.4, not shown). The use of secondary recovery reservoir is discussed in paragraph 26 of the specification. The recitation "means for performing a light exposing operation on the wafer using an objective lens immersed in the first fluid" (claim 15, L. 4-5) is not interpreted under 35 USC 112, sixth paragraph, because it is modified by sufficient structure, material, or acts for achieving the specified function. MPEP 2181. For

example, a first liquid supply (read as primary supply reservoir, Fig.2, #5) in the prior art (WO 99/49504) meet the claim limitation (means for providing the first fluid containing no surfactant) as the prior art discloses the same structure as applicants' disclosed in the specification and performs identical function as claimed (i.e. the function of providing fluid). In response to applicant's argument that Hazelton et al do not disclose the surfactant-containing fluid as recited in claim 15, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In response to applicants' argument that Amblard is teaching away from the claimed invention. Examiner position is that although Amblard discloses "a developer is not contact with the immersion lithography arrangement after the immersion lithography fluid is removed", it does not teach away, since Hazelton et al (primary reference) does not criticize, discredit, or otherwise discourage using a developer having cleaning effect after immersion lithography fluid is removed. In fact, Hazelton et al disclose that any cleaning liquid may be used provided it has a sufficiently strong affinity to the liquid to be removed (Hazelton et al, L.8-9 of paragraph [0035]). The statement "a developer is not contact with the immersion lithography arrangement after the immersion lithography fluid is removed" disclosed by Amblard does not render teaching away because the statement only criticize, discredit, or otherwise discourage contacting a developer with the immersion lithography arrangement after using the immersion lithography fluid disclosed by Amblard, however, there is no criticize, discredit, or otherwise discourage

using a developer having cleaning effect after immersion lithography fluid disclosed by Hazelton et al is removed. In response to applicants' argument that if the examiner intends to rely on both provisional applications, then the examiner must make a prima facie. Examiner position is that the provisional applications submitted to applicants are used to proof the subject matter relied upon to make rejection in compliance with 25 U.S.C. 112, first paragraph, examiner does not need to make a prima facie between two provisional applications, since Hazelton et al disclose them as in a single prior art/refernece.

Response to Amendment

15. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN KO whose telephone number is (571)270-3726. The examiner can normally be reached on Monday to Thursday, 7:30am to 5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on 571-272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SK
/Michael Kornakov/
Supervisory Patent Examiner, Art Unit 1792